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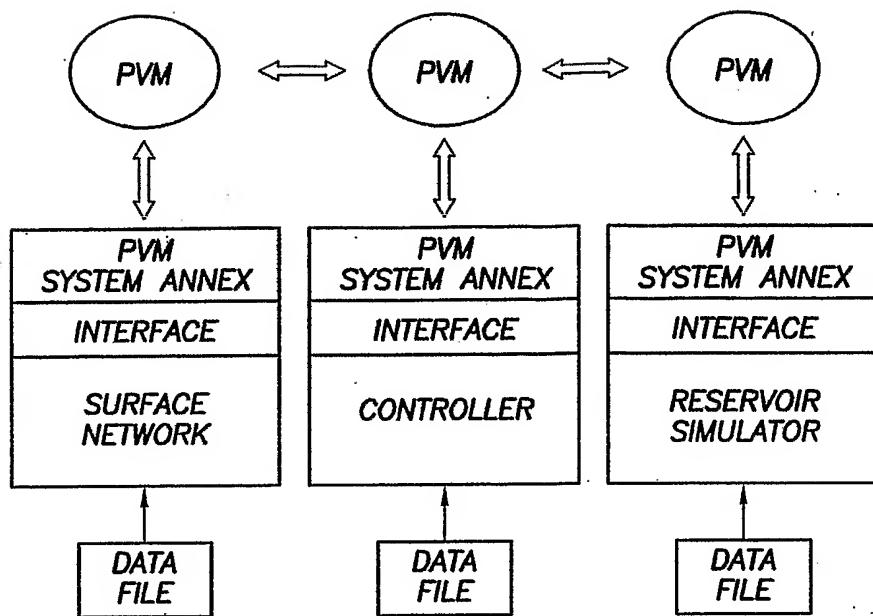


FIG. 1 - ARCHITECTURE OF THE COUPLED RESERVOIR/
NETWORK SYSTEM.

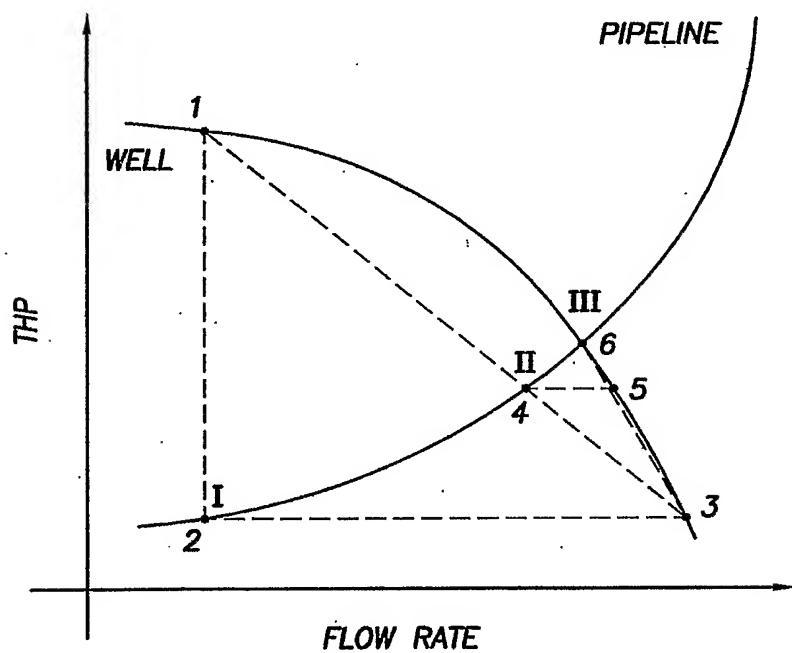
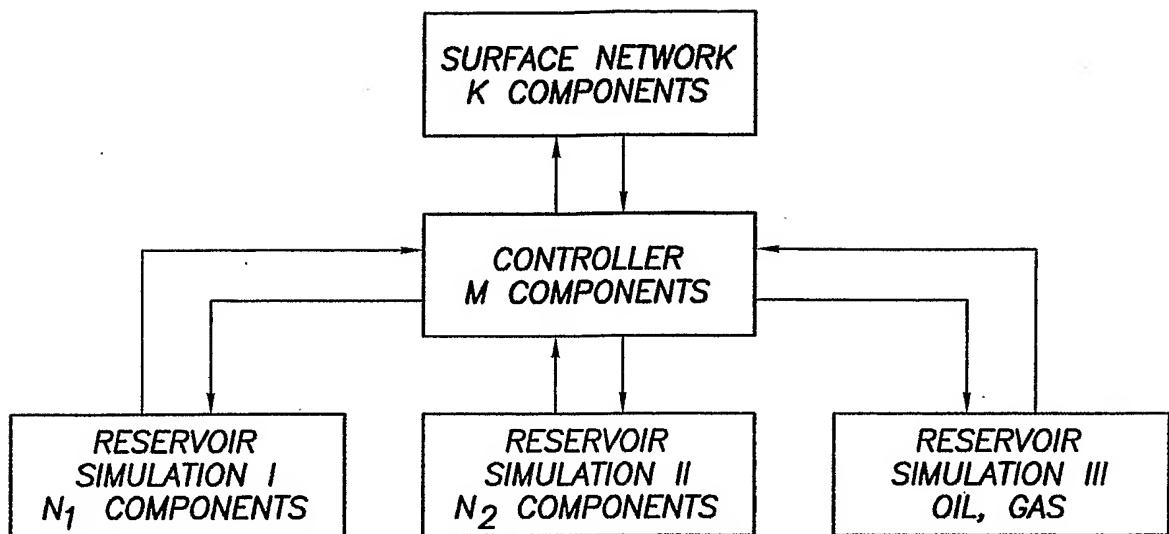


FIG. 2 - BALANCING A PRODUCTION WELL AND A NETWORK PIPELINE.

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**FIG.3 -PSEUDO-COMPONENT SETS IN A COUPLED SIMULATION.**

COMPONENTS/ PSEUDO-COMPONENTS	MOLE FRACTION
N_2	0.0069
CO_2	0.0069
C_1	0.5280
C_2-C_3	0.1515
C_4-C_6	0.0703
C_8	0.0867
HC_{13}	0.0529
HC_{18}	0.0340
HC_{26}	0.0238
HC_{43}	0.0145

TABLE 1 -INITIAL COMPOSITION IN THE ENTIRE RESERVOIR.

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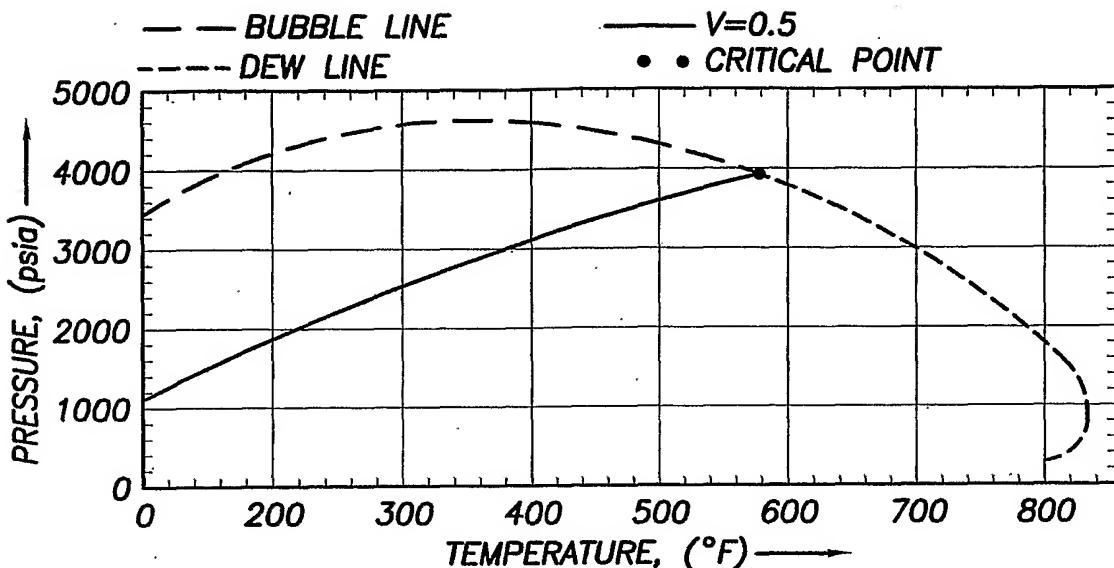


FIG.4 -PHASE PLOT FOR THE PVT SAMPLE USED IN THE BLACK OIL DELUMPING VALIDATION EXAMPLE. RESERVOIR TEMPERATURE=284 °F. INITIAL PRESSURE AT THE TOP OF THE RESERVOIR=4600 psi.

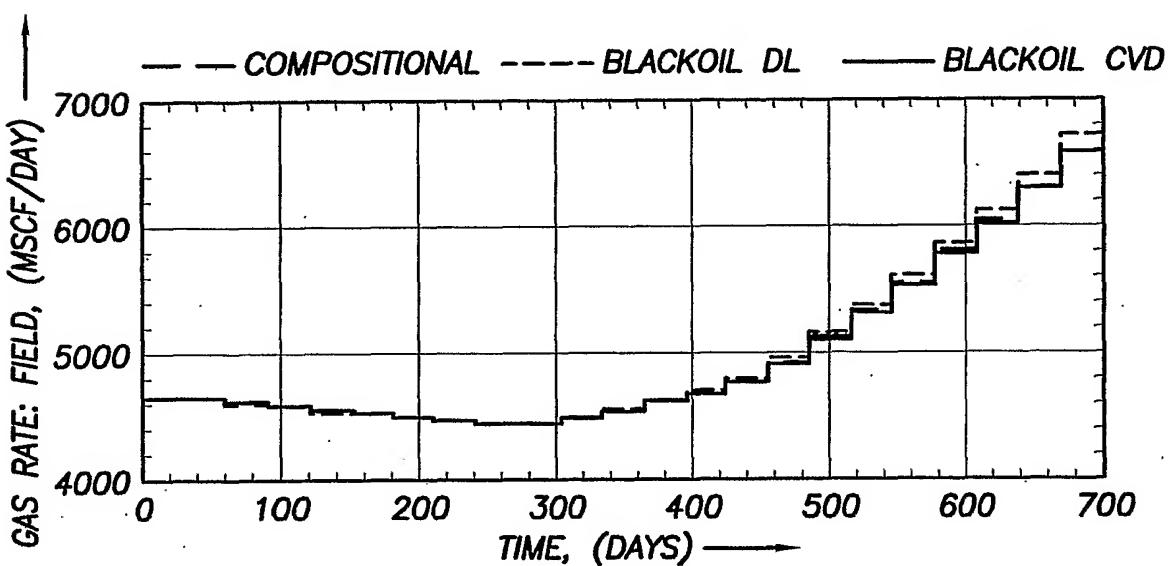


FIG.5 -FIELD GAS PRODUCTION RATE

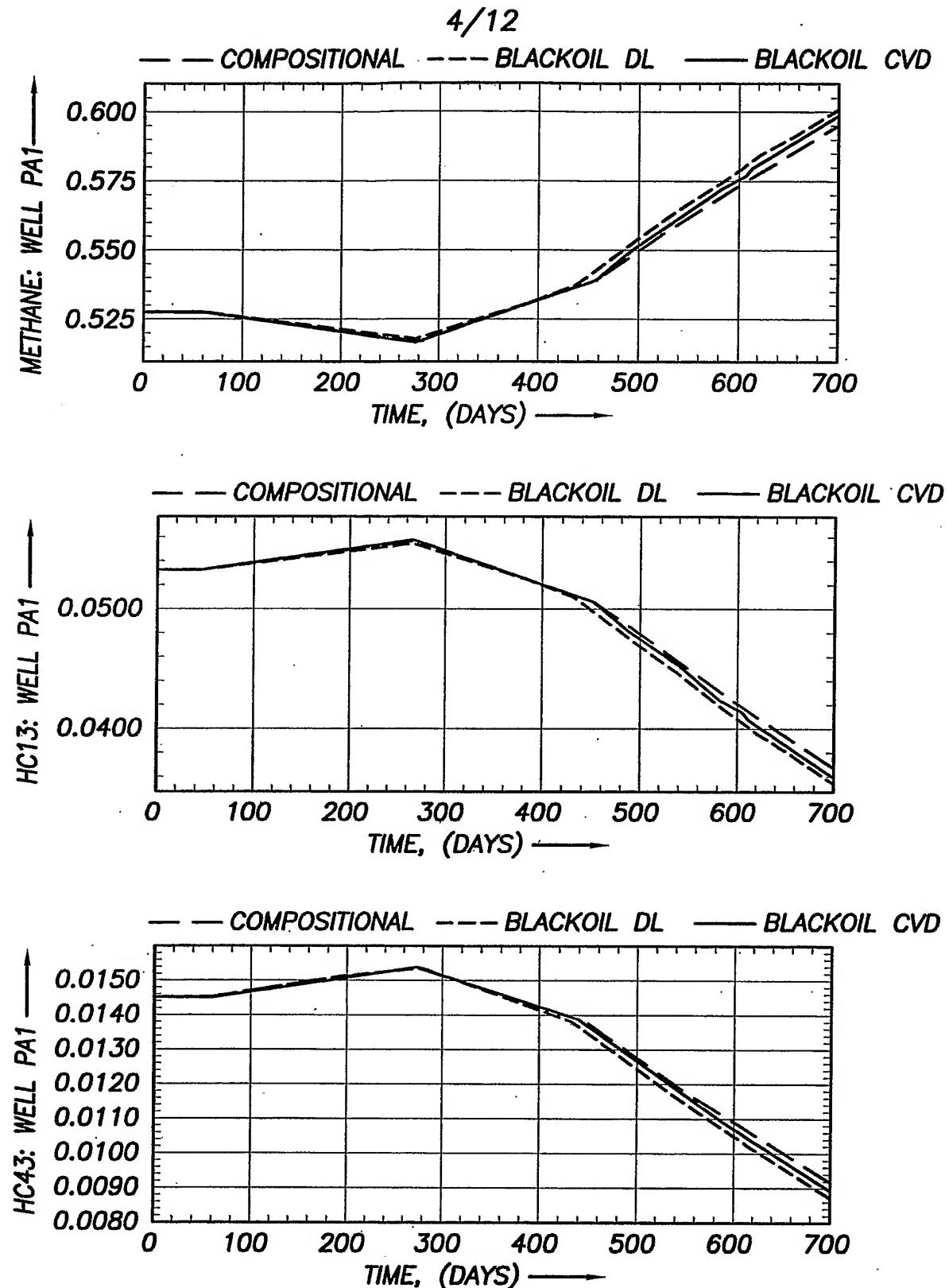


FIG. 6 - MOLE FRACTION OF METHANE AND THE HC13 AND HC43 PSEUDO-COMPONENTS' MOLE FRACTION VS. TIME FOR WELL PA1

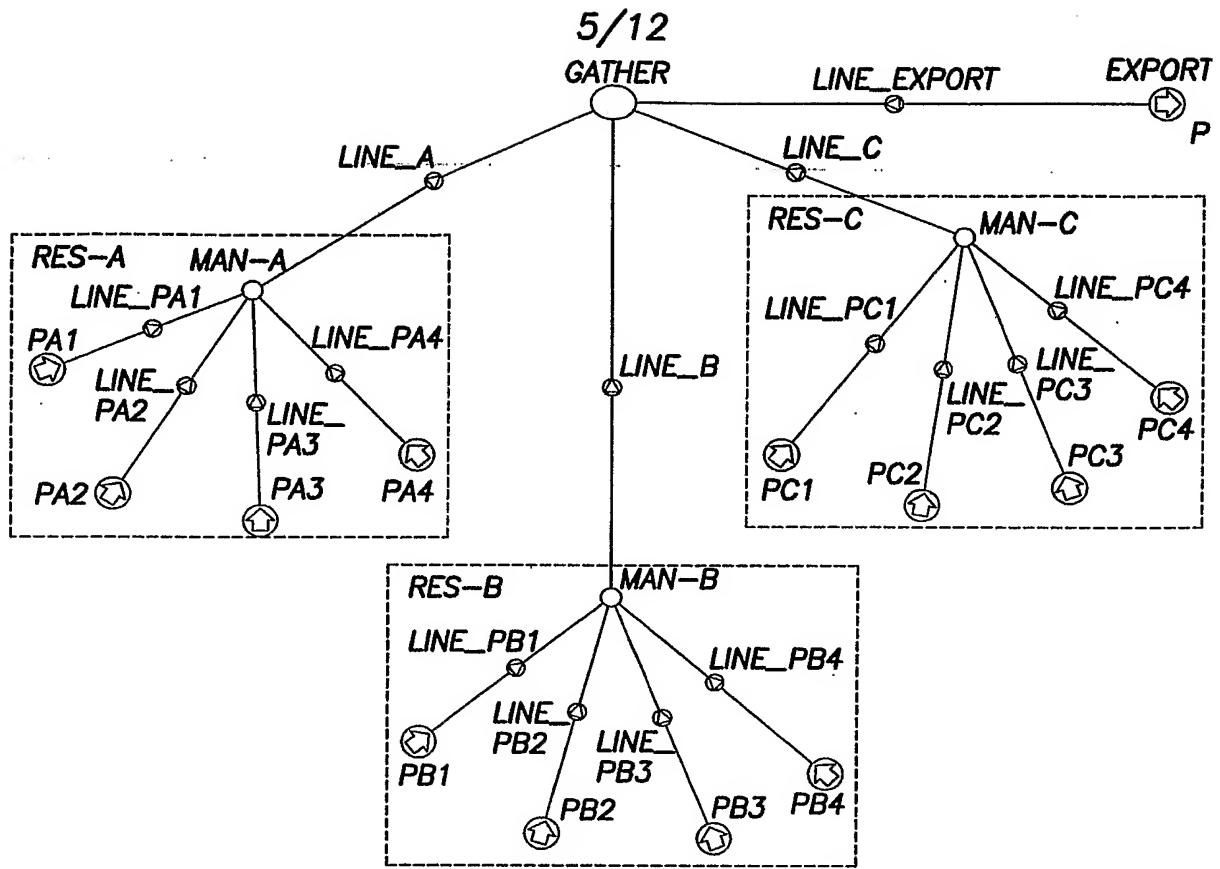


FIG. 7 - SKETCH OF THE SURFACE NETWORK USED IN EXAMPLE 1.

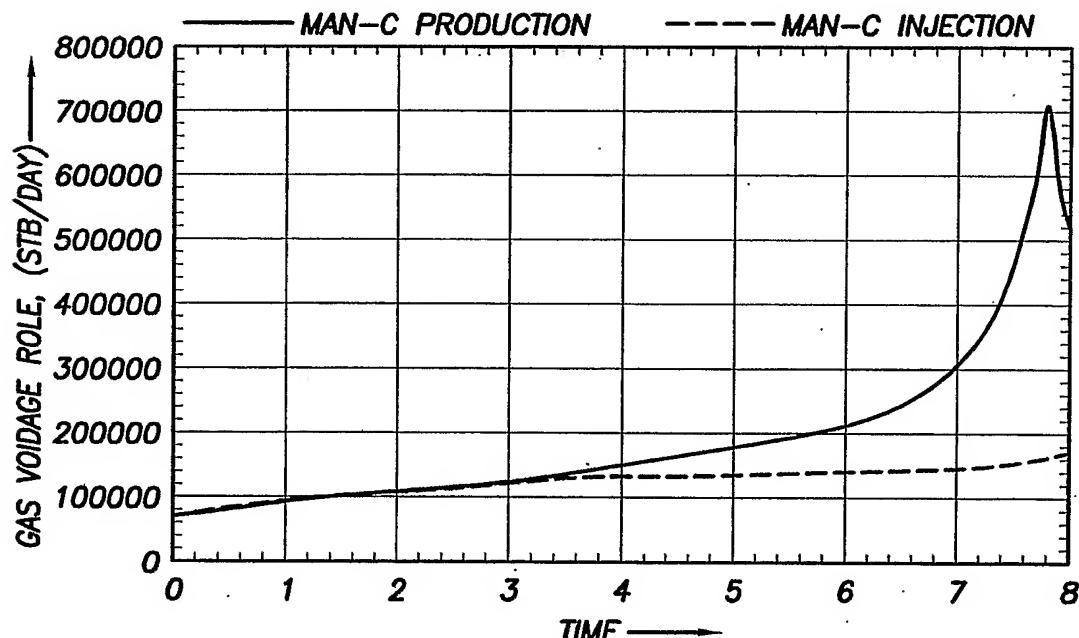


FIG. 14 - MAN-C RESERVOIR VOLUME PRODUCTION RATE AND RESERVOIR VOLUME GAS INJECTION RATE VS. TIME; EXAMPLE II

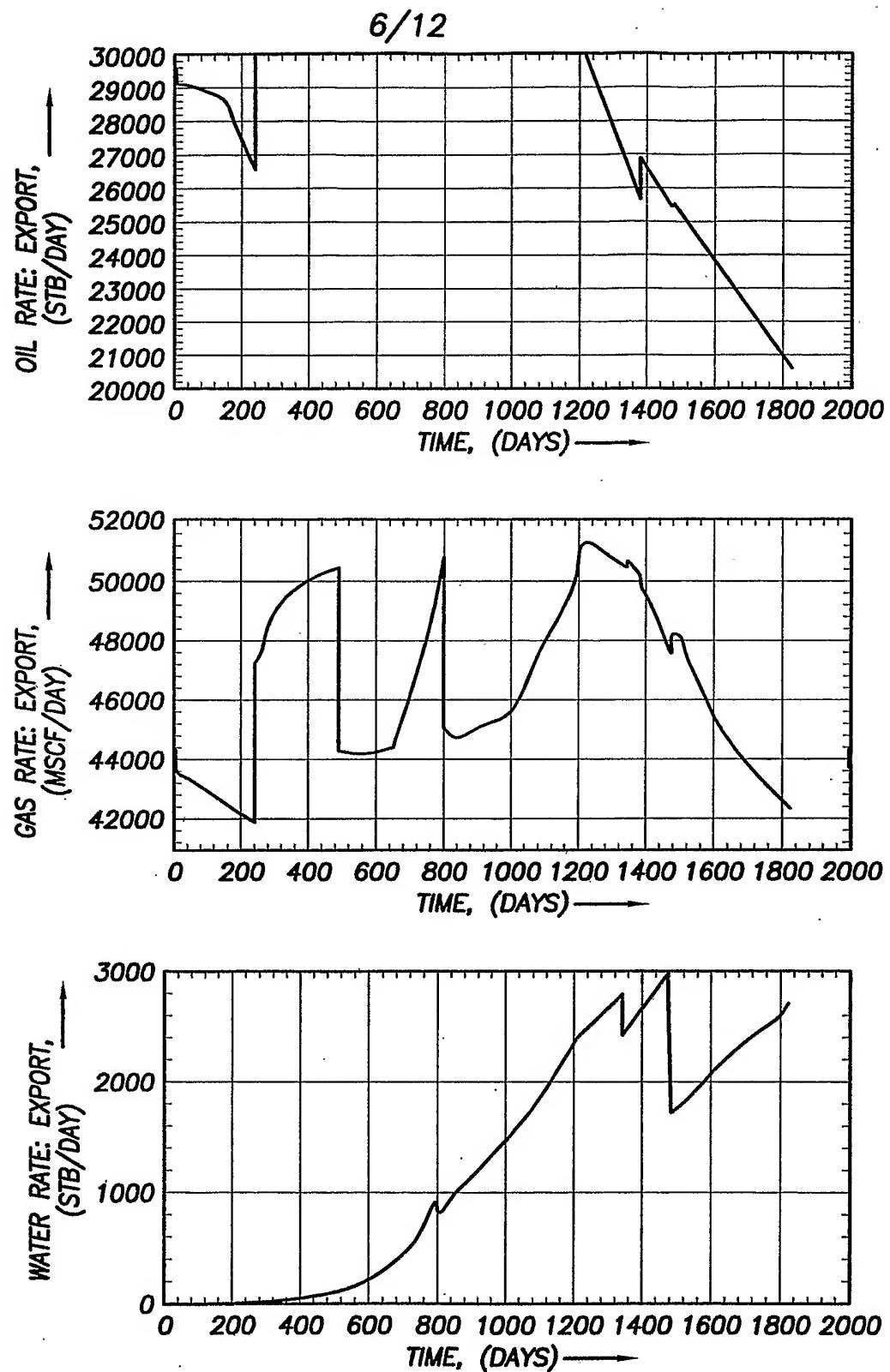


FIG.8 -OIL, GAS AND WATER PRODUCTION RATE VS. TIME AT THE EXPORT NODE; EXAMPLE 1

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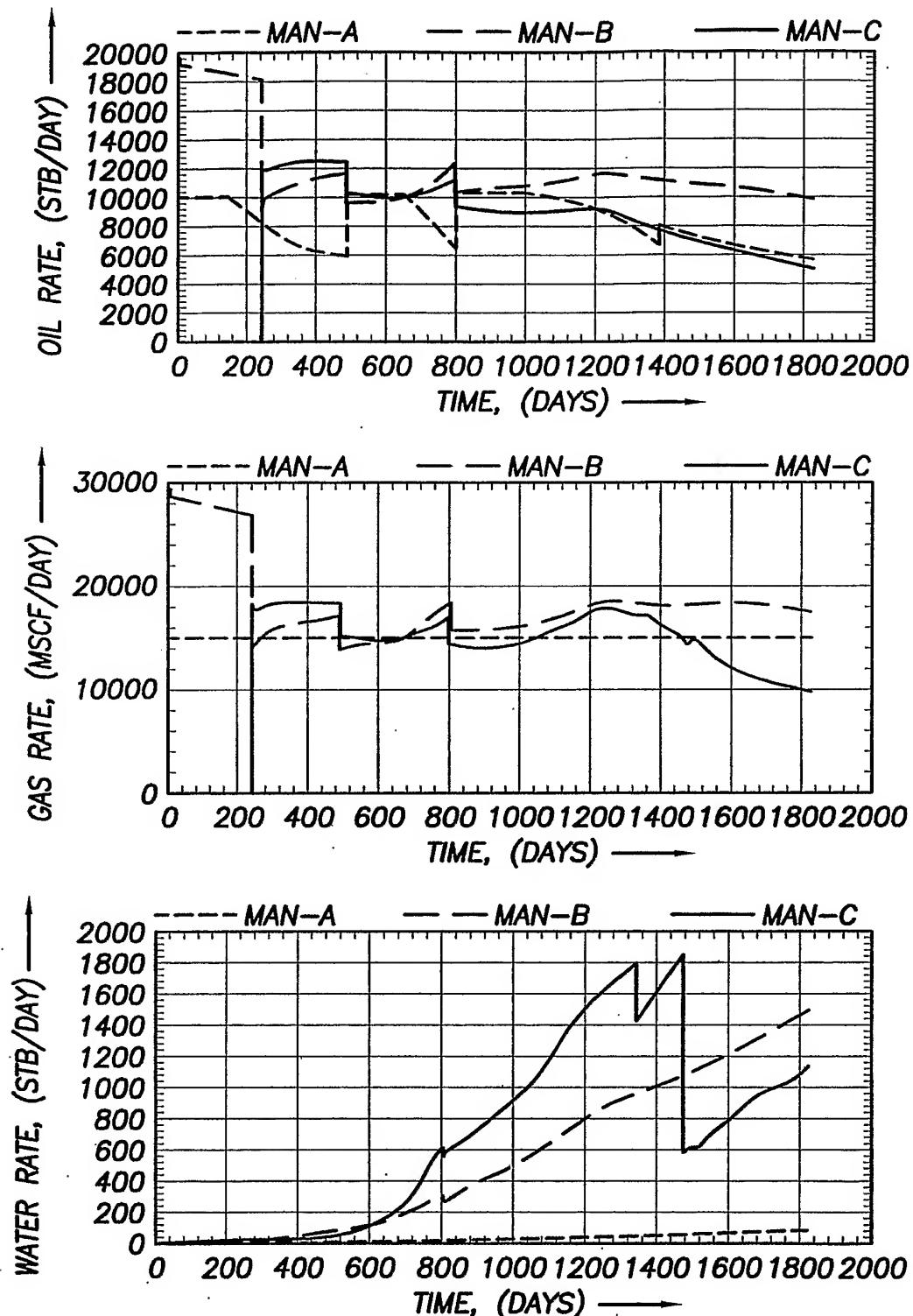


FIG.9 -OIL, GAS AND WATER PRODUCTION RATE VS. TIME FOR THE THREE COUPLED RESERVOIRS; EXAMPLE I.

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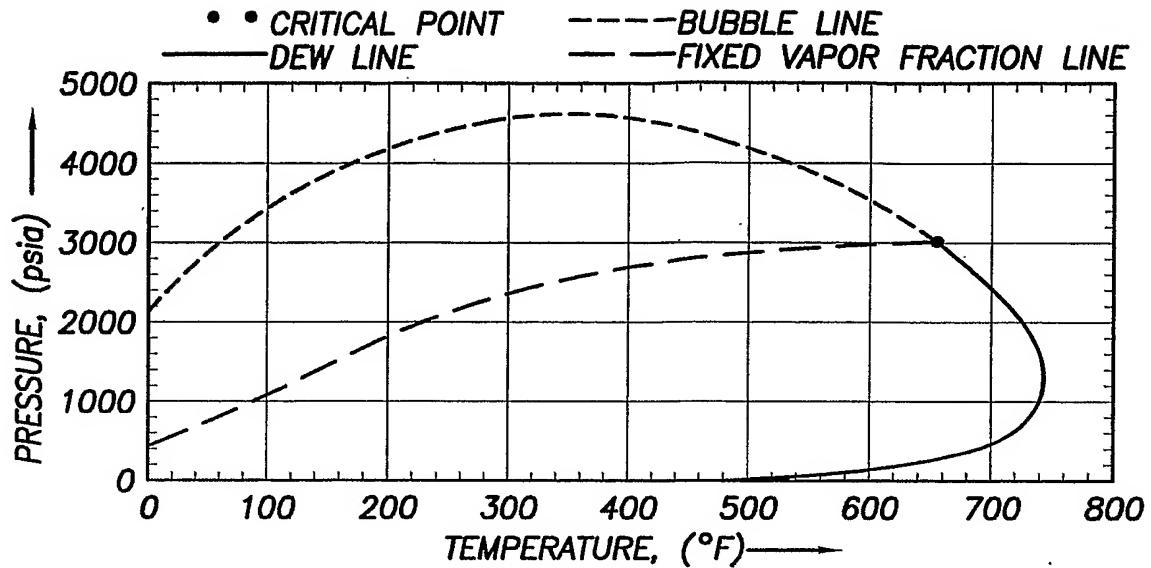


FIG. 10 -PHASE PLOT FOR THE PVT SAMPLES USED IN RESERVOIR B, EXAMPLE II. RESERVOIR TEMPERATURE=284°F.
INITIAL PRESSURE AT THE TOP OF THE RESERVOIR= 4600 psi.

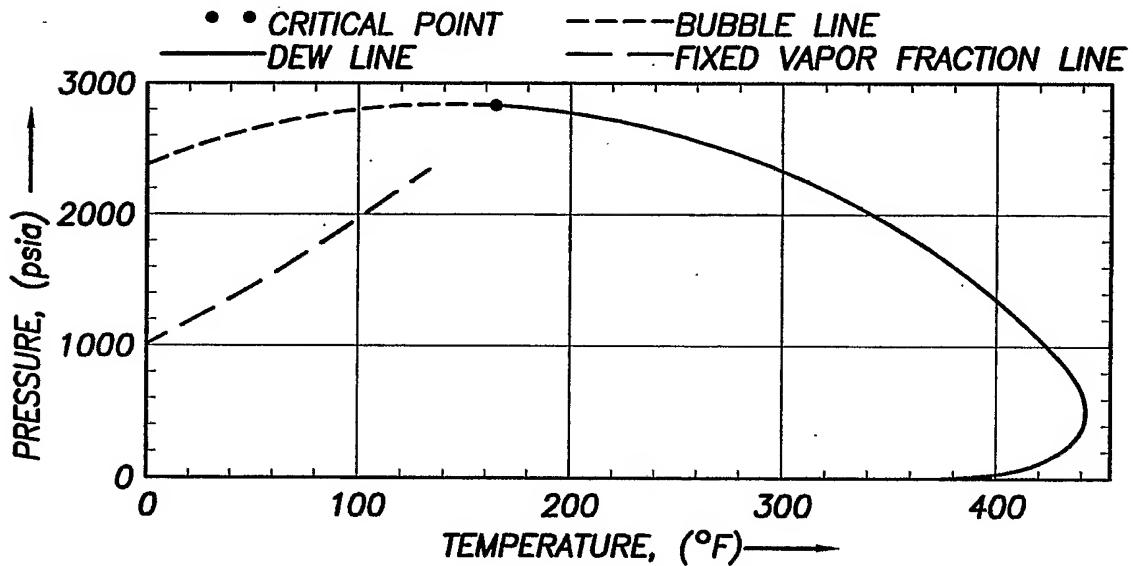


FIG. 11 -PHASE PLOT FOR THE PVT SAMPLES USED IN RESERVOIR C, EXAMPLE II. RESERVOIR TEMPERATURE=200°F.
INITIAL PRESSURE AT THE TOP OF THE RESERVOIR= 3000 psi.

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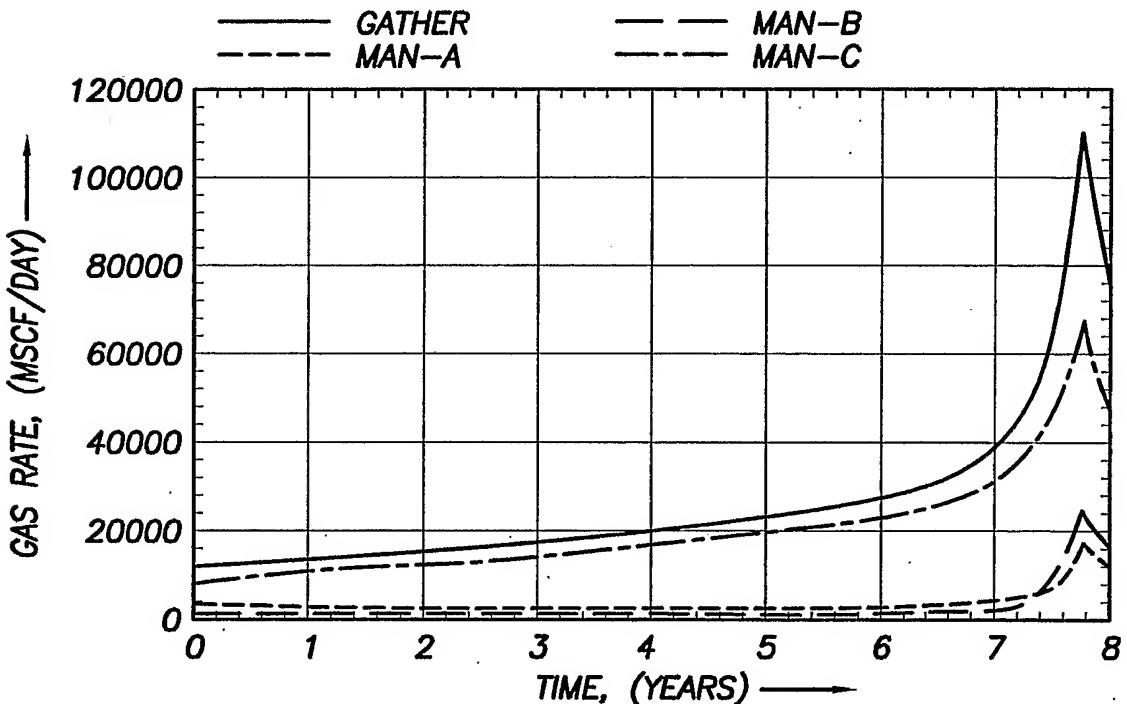
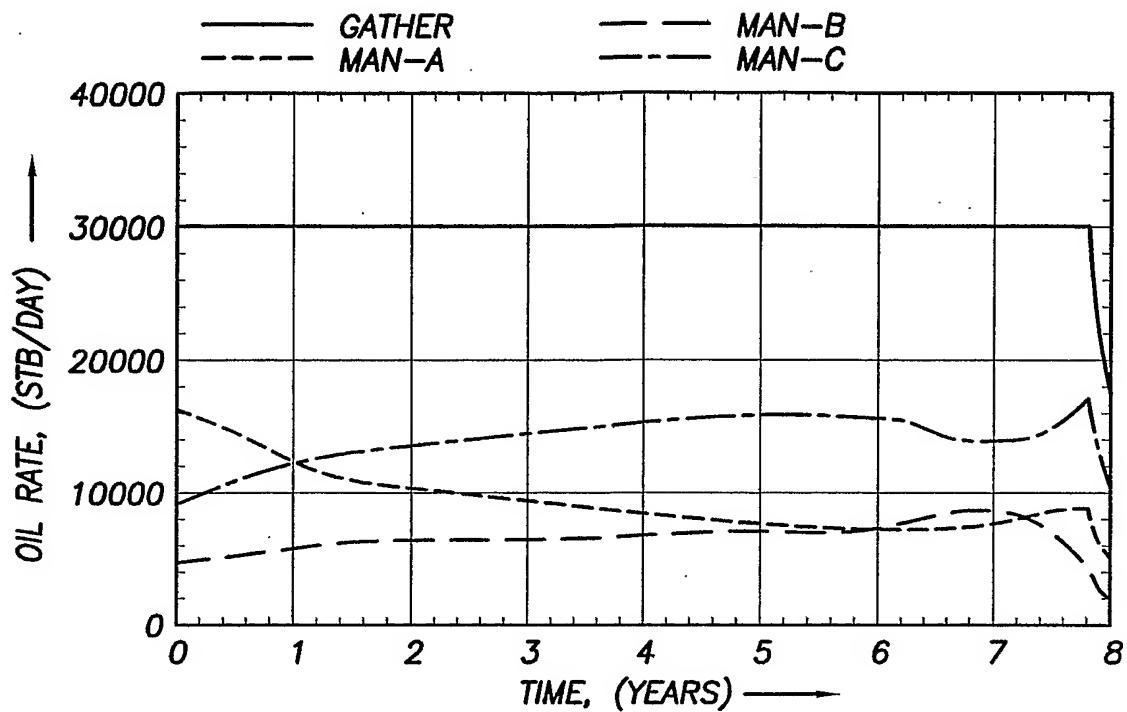


FIG. 12—OIL AND GAS PRODUCTION RATE VS. TIME; EXAMPLE II.

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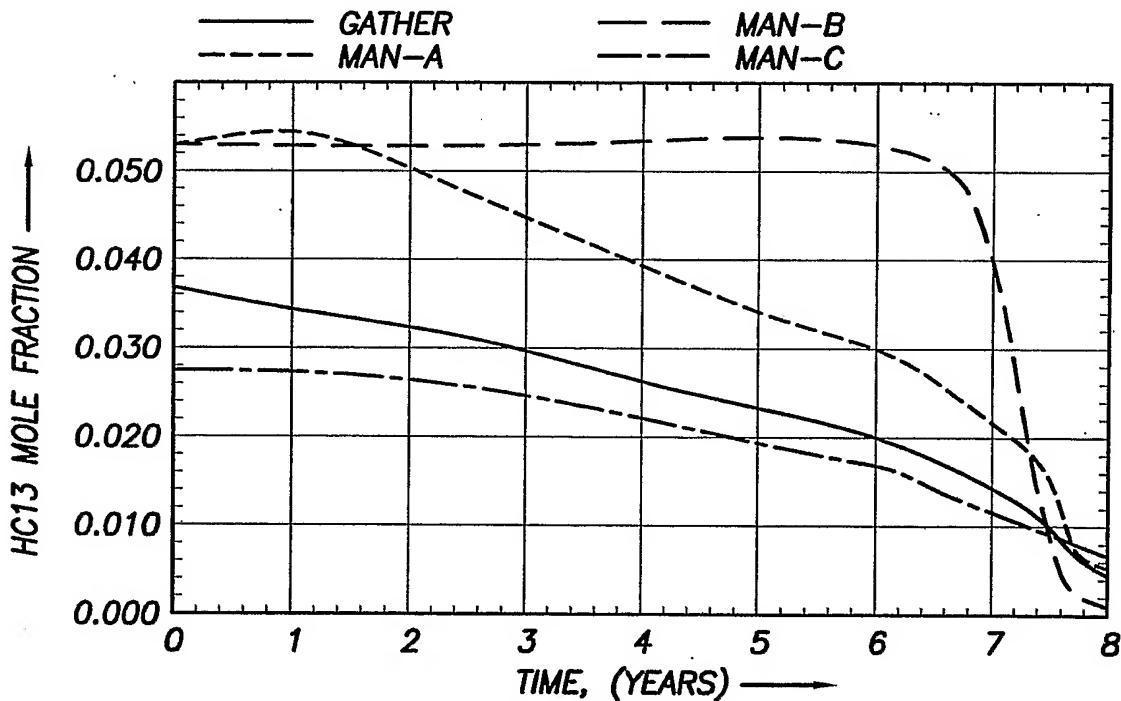
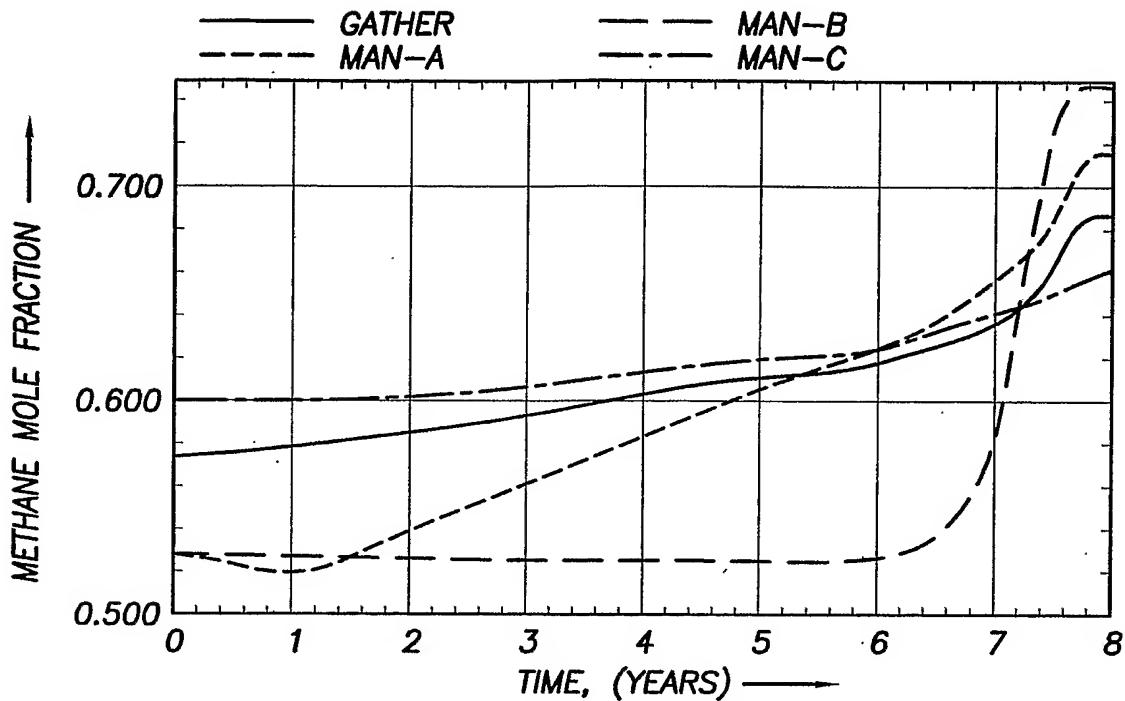


FIG. 13—PRODUCED METHANE AND HC13 COMPOSITION VS. TIME; EXAMPLE II.

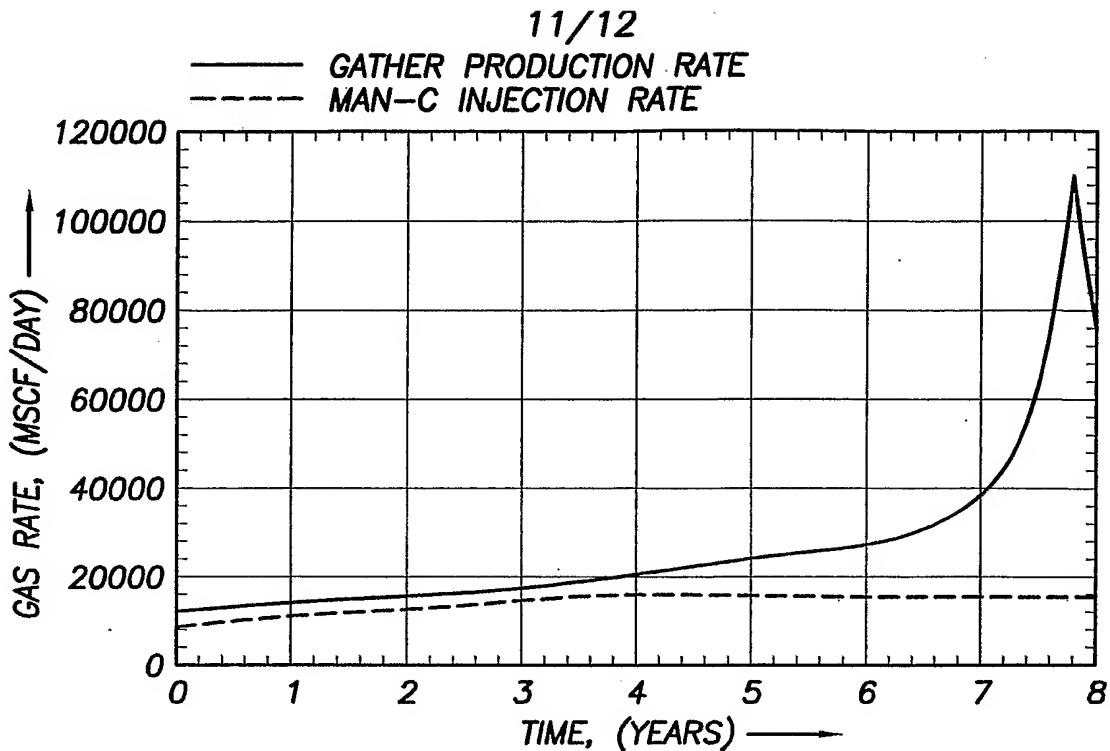


FIG. 15—GATHER GAS PRODUCTION RATE AND MAN-C GAS INJECTION RATE VS. TIME; EXAMPLE II.

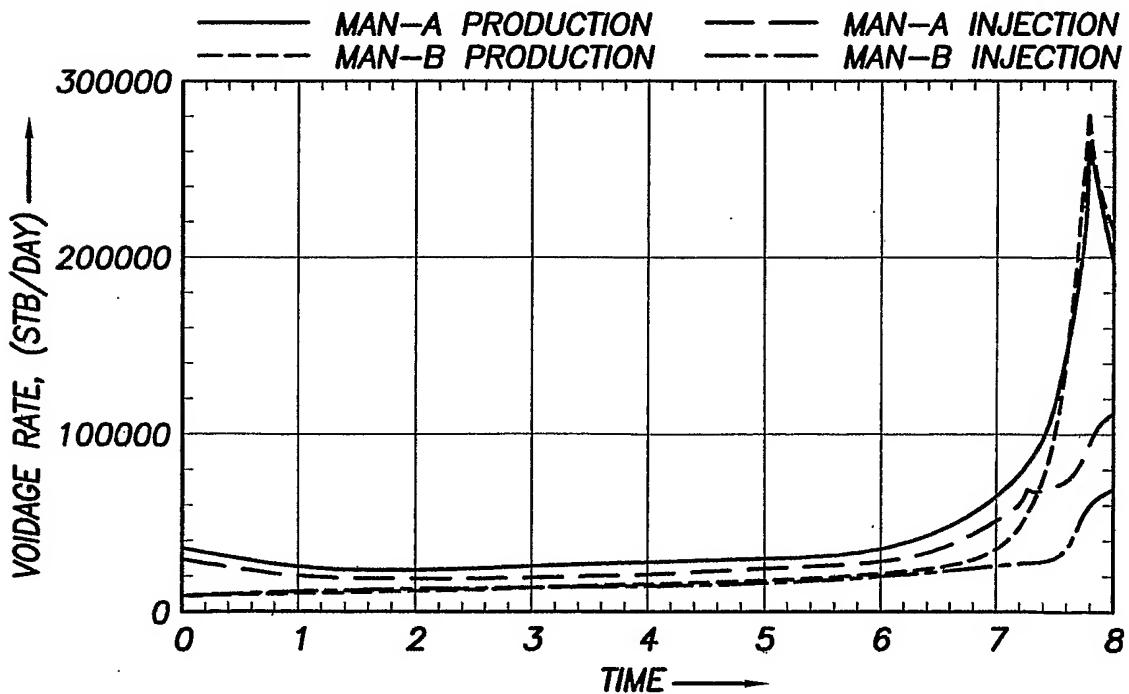


FIG. 16—MAN-A AND MAN-B RESERVOIR VOLUME PRODUCTION RATE AND RESERVOIR VOLUME WATER INJECTION RATE VS. TIME; EXAMPLE II.

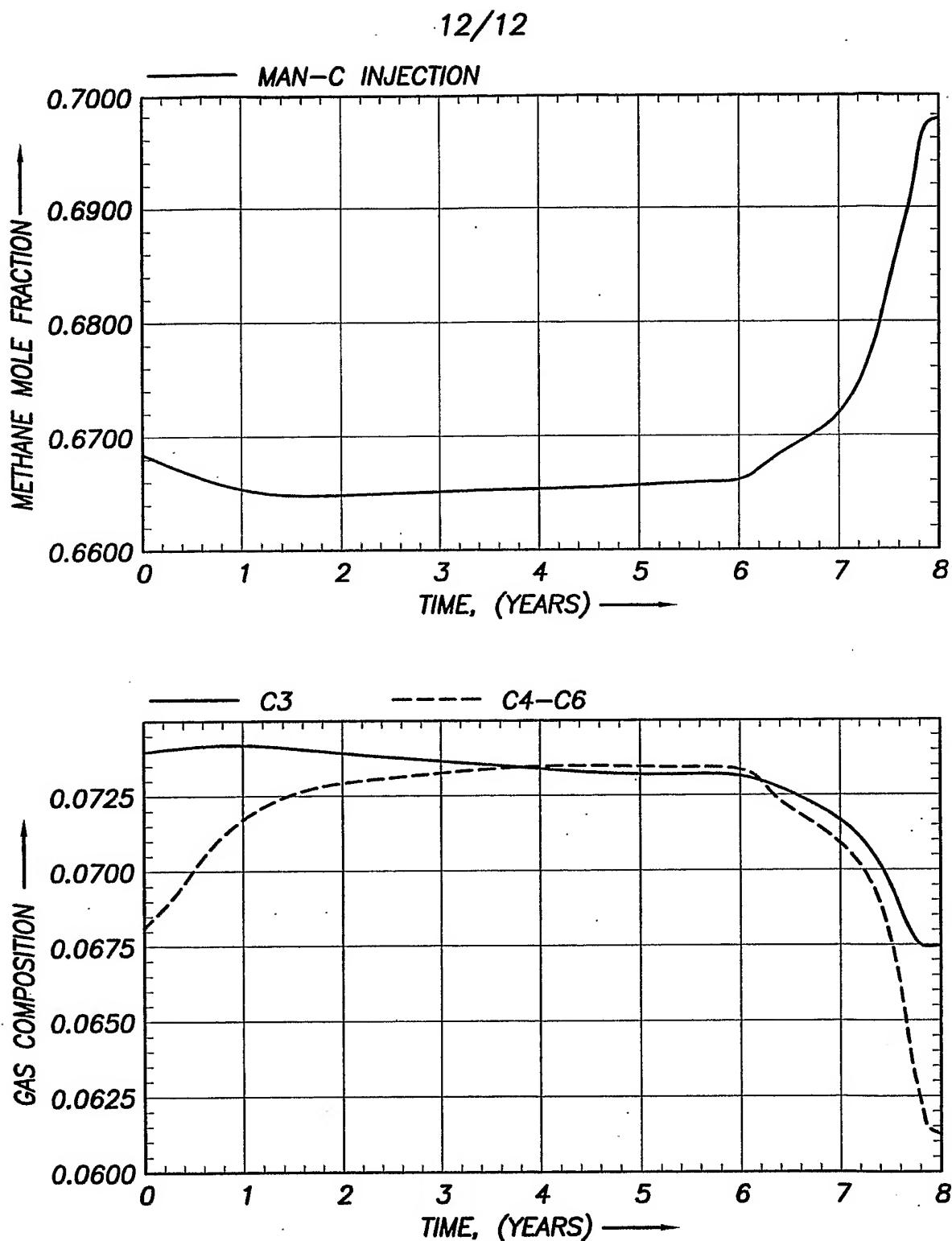


FIG. 17 - INJECTED GAS COMPOSITION VS. TIME, MAN-C;
EXAMPLE II.